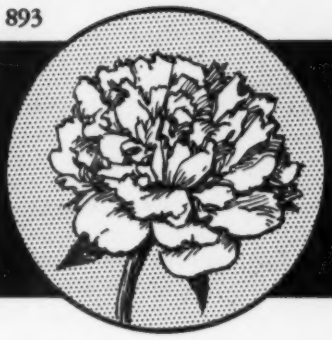
CORNELL EXTENSION BULLETIN 893

PEONY CULTURE



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This bulletin is concerned with the commonly grown garden peonies, *Paeonia lactiflora, P. officinalis,* and the Fernleaf peony, *P. tenuifolia.* Other species sometimes planted include the tree peonies, such as *P. suffruiticosa.*

The hardiness, the comparative ease of culture, and the permanent nature of a peony planting combine to make this flower one of the most valuable herbaceous perennials for gardens. The colors range from white through all shades of pink to the darkest red. Recently, hybridizers have introduced herbaceous peonies with yellow flowers, but they are still relatively expensive. The lasting quality of the cut flower makes the peony especially valuable for decorative purposes. The showy flower and the attractive foliage which remains in good condition all season, in some cultivars (varieties) turning bronzy red in autumn, give the plant definite landscape value. You may use the plants as a background for other flowers or for a herbaceous hedge effect.

Types of Peonies

Five main horticultural types of the garden peony (*Paeonia lactiflora*) have been established by the American Peony Society: the single or Chinese, the Japanese, the anemone, the semi-double, and the double types. The *single* or *Chinese* type has a flower with five or more true petals and a center of pollen-bearing anthers. 'Scarf Dance' and 'Pride of Langport' are examples of this group. Several of the singles are among the earliest peonies to bloom in the garden. The *Japanese* type, illustrated by 'Mikado' and 'Mme. Butterfly', has five or more large guard petals and a center made up of stamens bearing abortive anthers with practically no pollen. The *anemone* type is similar to the Japanese but has no anthers; the filaments of the stamens have been transformed into narrow, incurved petal-like parts. Examples are 'Philomele' and 'Primevere'. Semi-doubles such as 'Phyllis Kelway' and 'Minnie Shaylor' have five or more broad outer petals and a center of petals intermixed with stamens which are always prominent. In the *double* type the stamens and sometimes the stigmas have become petaloid, giving a fully double flower. Several varieties in this group are listed on page 4.

New York State College of Agriculture

Site and Soil

The culture of the peony is relatively simple. The plant thrives in practically all types of garden soil, but grows best in a rich garden loam. The soil must be well drained and retain adequate moisture during the flowering season of the plant. The plants need plenty of sunlight. Peonies will not do well in shade or in low areas that become waterlogged. Peonies planted in shade are more subject to diseases than when in full sun.

Planting

Set out new plants as soon as you receive them from the nursery, generally between September 1 and October 15. You may move the plants in the garden at this time also. In heavy clay soils, deep preparation of the soil before planting is important. This improves the drainage and permits you to add organic matter, such as well-rotted manure, compost, leaf mold, or peat moss.

In planting, set the roots or toes so that the new eyes or buds at the base of each stem are about at the level of the surface of the soil. If you bury these buds with more than two inches of soil, the plants will not be thrifty and may fail to bloom. Dig the hole large enough to allow the roots to spread out as they naturally grow. Firm soil about the roots and water the planting thoroughly. Dwarf varieties may be set two feet apart when the plants are intended to form a compact row or hedge effect. For the vigorous-growing Japanese type and the large spreading double-flowered peonies, 4 feet apart is not too much.

Fertilizing

Peonies respond to liberal fertilization. Fertilizers may be applied just after the blooms have faded in early summer. A handful of a 5-10-5 or 10-10-10 commercial fertilizer worked into the soil about each plant is adequate. You may make yearly applications of well-rotted manure in the fall of the year and then work it into the soil the following spring. Never use fresh manure, for it is injurious to the peony roots.

Cultural Practices

Although peonies survive under competition with weeds better than most plants, clean cultivation is the best practice. Thoroughly weed the bed and cultivate it in early spring, then remove weeds whenever necessary. A heavy mulch of sawdust or some other material helps to keep down weeds.

If you grow peonies for exhibition, you may disbud them early in the season. Allow one bud to develop on a stem. This eliminates inferior buds and produces larger flowers.

When the flowers have faded, remove the developing seed pod and the flower stalk. In the fall when the frost has killed the foliage, cut off all stems close to the ground and burn them.

Staking

Stake any weak-stemmed plants when they have attained a growth of 15 inches. Staking prevents the weight of the large double-flowered types from bending the stems to the ground. You may use forked branches to prop up the heavy large-flowered types, or you may circle the plant with a hoop of wire or string connected to three or four stakes. With either method, be sure the stakes are as inconspicuous as possible.

Propagation

Peonies grow so slowly from seed that it takes several years for seedlings to flower. With this method of propagation, it is customary to use the laboratory technique of excising the embryos and growing them on a nutrient agar medium under aseptic conditions. The usual method of propagation is to divide large clumps.

If old established plantings fail to flower satisfactorily, divide the clumps. Generally, peonies shoud be divided about every five or six years. The most favorable time to divide or transplant established plants is from September 1 to October 15. Divide large clumps of roots into sections so that there are at least three eyes or buds on each clump of roots (or toes) of the new division. These should provide flowering plants for the following season. New divisions without eyes or buds should be discarded. During the first winter after the plants have been transplanted or divided, apply a light mulch of straw, manure, evergreens, or some other material as soon as the ground freezes. Remove the mulch the following March.

Failure to Bloom

A peony planting may fail to bloom for one or more of the following reasons:

1. Old choked plants need to be divided
2. New plants were too recently planted
3. Divisions were too small
4. New plants were planted too late in the season, or division of old plants were made too late in the fall
5. Plants were set too deep
6. Buds blasted due to a late freeze in the spring.
7. Botrytis blight or Phytophthora blight attacked the plants.

Diseases

Symptoms of the Botrytis and Phytophthora blight are similar. Young shoots may wilt suddenly and collapse. A soft, light brown rot may develop (Botrytis) or diseased tissues may be dark brown to black in color and of a leathery texture (Phytophthora). Small buds when attacked may cease growth and turn black. A bud blast similar in appearance may be due to a late freeze, to poor vigor of the plants, or to too deep planting.

Clean culture is the best way to control either of the blight diseases. Cut to the soil line all rotted or wilting shoots, leaves, or buds, and burn them.

This prevents overwintering of the disease on the old foliage. If the plants attacked by the blight are in a shaded or semi-shaded area, remove them to a situation in full sun. Several applications of bordeaux spray to the new shoots in early spring may help to combat these blights.

Ants are commonly found on peonies. As far as is known these ants cause no direct injury to the flowers.

Varieties

The American Peony Society maintained a rating scale of all registered peonies, but unfortunately, during the last decade or so, new cultivars have not been added. A few of the higher rated cultivars in each of several types are listed according to color, season and official rating in the following table. The rating is based on a scale from 1 to 10, with 10 the best.

White and Light Colors

Early	*Mid-Season*	*Late*
'Festiva Maxima' 9.3	'Baroness Schroeder' 9.1	'Elizabeth Barrett Browning' 9.2
'Mons. Jules Elie' 9.2	'Francis Willard' 9	'Lady Alexander Duff' 9.1
	'Kelways Glorious' 9.8	'Solange' 9.7
	'Le Cygne' 9.9	'Tourangelle' 9.4

Pink and Medium Colors

Early	*Mid-Season*	*Late*
'Le Fee' 9.2	'Loveliness' 8.8	'La France' 9.0
'Martha Bullock' 9.1	'Mme Jules Dessert' 9.4	'Milton Hill' 9.0
	'Marie Grousse' 8.9	'Raoul Dessert' 9.0
	'Rosa Bonheur' 9	'Sarah Bernhardt' 9.0
	'Therese' 9.8	'Walter Faxon' 9.3

Red and Dark Colors

Early	*Mid-Season*	*Late*
'Mikado' 8.6	'Longfellow' 9.0	'Felix Crousse' 8.4
'Phillipe Revoire' 9.2	'Mary Brand' 8.7	'Karl Rosenfeld' 8.8
'Richard Carvel' 8.8	'Mons Martin Cahuzac' 8.8	

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